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New records of helminths from Malayan reptiles with a description of *Mesocoelium gonocephali* sp. nov.

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INTRODUCTION

Previous work on helminths of Malayan reptiles has been reviewed by Balasingam (1963) who added many new records and described one new species of trematode. In the present paper six additional helminths are recorded from Malayan reptiles, of which one is a new species.

Names of reptile hosts are those used by Smith (1930). The material examined was obtained from the helminthological collections of the Zoology Department and the Department of Parasitology, University of Singapore. Some of the material was also collected by the author. The trematodes and cestodes were firmly pressed and fixed in alcoholic Bouin. They were preserved in 70 per cent alcohol and stained in Delafield's Hæmatoxylin or Borax carmine. The nematodes were fixed in hot 70 per cent alcohol and later preserved in 70 per cent fresh alcohol. These were examined in lactophenol.

NEMATODA

Spiroxys gangetica Baylis and Lane

Three females and one male were collected from the stomach of a *Trionyx* sp., of which the gut alone was purchased from the Sago Lane Market, Singapore on 17th May, 1962. The host probably originated from Malaya. When alive the worms were semi-transparent.

S. gangetica resembles *S. torquata* Karve which was recorded by Baylis (1933) from the stomach of *Trionyx cartilagineus* in Malaya. This species was subsequently synonymised with *S. annulata* Baylis and Daubney, by Baylis (1939). *S. annulata* resembles *S. gangetica* in the following features: presence of a median tooth in each lobe of the lips, presence of caudal papillæ in the female, similar number and arrangement of caudal papillæ in the male, a forwardly directed vagina, and similar egg size. It however differs from *S. gangetica* mainly in having equal spicules and in general body measurements. *S. gubernæ* Chakravarty and Majumdar from an Indian tortoise *Chitra indica*, resembles *S. gangetica* in the following features: absence of median teeth in the middle lobe of the lips, absence of caudal papillæ in the female, presence of an accessory piece, and the proportions of the different parts of the body and size of eggs.

Cucullanus serratus (Lane)

Twenty females and six males were obtained from the small intestine of a *Trionyx* sp. The gut of the host was purchased from the Sago Lane Market, Singapore, on 17th May, 1962. The host probably originated from Malaya. Six males and three females were measured.

The genus *Cucullanus* Muller, 1777, has been reviewed by Tornquist (1931) and a number of new species were subsequently added by Yamaguti (1961). The present material agrees with the description of *C. serratus* given by Baylis (1939). The genus *Dichelyne* Jagerskiold, 1902, resembles *Cucullanus* closely and they were regarded as synonymous by Yorke and Maplestone (1926). *Dichelyne trionyx* described by Chakravarty and Majumdar (1961) from *Trionyx gangeticus* resembles *C. serratus* in many respects. *D. trionyx* however possesses a cecum whereas *C. serratus* does not. This clearly separates the two genera.

Hastospiculum varani Skrjabin

The material examined came from the helminthological collection of the Zoology Department. It was collected on 24th March, 1961 from the mesentery of a monitor lizard, *Varanus salvator*.

The specimens described here have similarities to the two species, *Hastospiculum macrophallos* and *H. varani*. Baylis (1939) synonymised the two species and this view is accepted in the present work. Baylis (1939) also states that complete specimens are seldom obtained and that the males are comparatively rare. However this is not the case locally since we do have a number of males and all our specimens are complete.

Meterakis singaporensis (Sandosham)

The specimens were from the helminthological collection of the Zoology Department. They had been collected on 25th November, 1961 from a skink, *Mabuya multifasciata*, in Singapore. Four specimens were examined, of which only one was a male.

M. singaporensis has, so far, been described only from *Bufo melanostictus* and this is the first recorded instance of its occurrence in reptiles. The specimens described here are longer than those from *B. melanostictus*, and the distances of the excretory pore and nerve ring from the anterior end also differ slightly. However, the differences are slight compared to the many similarities. *M. singaporensis* resembles the two species *M. govindi* (Karve, 1930) and *M. mabuya*, (Chakravarty, 1944) but the spicule length in the specimens studied differs from that described in those species. In *M. govindi*, the spicules are only about 0.27 mm., and in *M. mabuya*, the spicules are only 0.3 mm. in length while in the present specimens the spicules are 0.972 mm. long.

TREMATODA

Mesocoelium gonocephali sp. nov.

Figure 1

Holotype.—Collected from a *Gonocephalus grandis* in the Kepong Forest Reserve, Kuala Lumpur, Selangor, on 21st November, 1951, and deposited in the British Museum (Natural History).

Paratypes.—From the same host and locality, and deposited in the Zoology Department, University of Singapore, and British Museum (Natural History).

Description.—The body is elongate and is 2.04–3.28¹ long (type 3.28) and 0.75–0.94 in maximum width (type 0.94). It narrows down towards the posterior end. The cuticle is aspinous. The oral sucker is subterminal and measures 0.20–0.28 in diameter. The intestinal caeca extended to the midlevel region of the body. The acetabulum is almost as large as the oral sucker. It measures 0.22–0.24 in diameter. The sucker ratio is 0.99–1.16 : 1.

The testes are subspherical in shape and measure 0.11–0.17 × 0.09–0.14. They are much smaller than the ovary and are situated anterior to it. They are slightly posterior to the acetabulum and are situated on either side of it. The acetabulum partially overlaps them. The testes on the ovarian side is slightly anterior to its partner. They do not overlap the caeca. The cirrus pouch is oval and measures 0.098–0.144 × 0.047–0.072. The genital pore is in the midline posterior to the intestinal bifurcation.

The ovary is subspherical and measures 0.20–0.24 × 0.16–0.18 in size. It is posterior to the right testes. It does not overlap the acetabulum. The vitellaria are situated laterally in clumps in extracaecal position. They extend from the level of bifurcation in the pharyngeal region to a little posterior of the middle region of the body. The specimens contain a large number of eggs. The individual coils of the uterus are not seen. The eggs fill up the whole of the postovarian region. The egg size is 0.029–0.036 × 0.014–0.022. They vary in colour from yellow to black and are dimorphic in character.

Discussion.—Trematodes of the genus *Mesocaulium* Odhner, 1911, possess the following characteristics: spinous or aspinous, intestinal caeca of medium length; never reaching the posterior margin of the body, testes anterior to the ovary; vitellaria lateral to the caeca, intermingling along medial line but never extending to the posterior margin of the body, and excretory vesicle I- or J-shaped.

Members of this genus parasitise both amphibians and reptiles in which they are found in the small intestine.

Cheng (1960) reviews the genus *Mesocaulium* Odhner and recognizes only twenty-eight species; of thirty-two described species, as valid. The specimens described in this paper do not correspond to any of those reviewed by Cheng (1960). The present specimens bear resemblances to *Mesocaulium sociale*: *M. sociale* resembles *M. meggiti* very closely. Chatterji (1940) synonymised them as *M. sociale*. Cheng (1960) separates the two species on the basis of characters such as position of the genital pore and shape of excretory vesicle. He considers these two characters as sufficiently consistent to be reliable as diagnostic characters. Yuen (personal communication), however, has observed that the position of the genital pore is a variable character and that it may differ in living and preserved specimens. She has also mentioned that the shape of the excretory vesicle is difficult to distinguish in most cases. So, she feels that these characters cannot be used to separate *M. sociale* and *M. meggiti*. She shows that these are not consistent characters and agrees with Chatterji (1940) that the two species are synonymous in spite of the difference in the systematic position of the hosts.

The species described here differs from *M. sociale* in the following features: The cuticle is aspinous; the ventral sucker is larger, the sucker ratio being almost 1 : 1; the intestinal caeca do not reach the posterior one-third of the body; the testes are smaller and do not overlap the caeca; they are smaller than the ovary; and the vitellaria occur in clumps.

The name *Mesocaulium gonoccephali* is proposed for this species after its host.

1. All measurements in mm, unless otherwise stated.

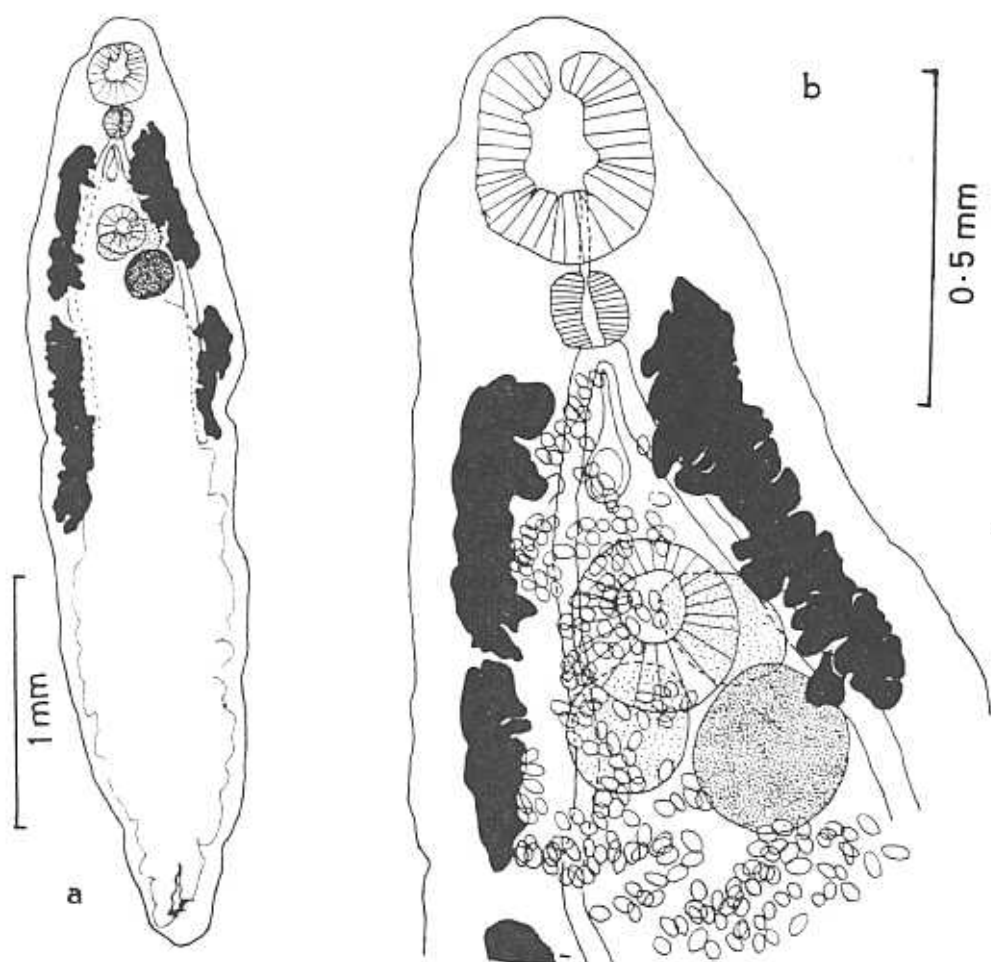


Figure 1. *Mesocoelium gonocephali* sp. nov. a ventral view, b anterior portion enlarged.

CESTODA

Acanthotaenia shipleyi von Linstow

The specimens were obtained from the helminthological collection in the Zoology Department. They had been collected from the small intestine of a *Varanus salvator* on 23rd March, 1961 in Malacca.

A. shipleyi von Linstow (1930) was first described from a *Varanus salvator* in Ceylon. Yamaguti (1954) re-described it from Celebes. Yamaguti's specimen differs from von Linstow's in the gravid proglottids being definitely longer than broad. He claims that von Linstow's specimen was immature and contracted so that the testis appeared crowded. In von Linstow's original description, the testis do not appear to be in two fields. He also failed to see the peripherally situated vitelline glands and wrongly termed the ovaries as vitelline glands. Yamaguti's specimens were better extended and the vitellaria and the two fields of testis were clearly noted.

The present specimens studied agree with Yamaguti's description. The worms on the whole are found to be longer and the proglottids narrower. This is probably due to the fact that they are well extended. The slight differences noted in many measurements are probably due to the state of contraction and extension of the worm when fixed in alcoholic Bouin. Beddard (1913) notes that the anterior end of *Acanthotaenia* is very protrusible and the presence of a suckerlike depression at the anterior end depends on the state of protrusion of the anterior end.

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